

CLAIMS:

1. An optical record carrier having at least one information layer, wherein information is encoded in an information structure comprising information areas, which alternate with intermediate areas, characterized in that the information layer is provided with a polarisation-sensitive diffraction grating comprising a grating layer, which is divided in
5 grating strips of a first type alternating with intermediate strips of a second type, at least one of the types comprising a birefringent material, and in that the refractive indices of the grating strips and intermediate strips are different for radiation polarised in a direction parallel to the grating plane and perpendicular to the grating strips.
- 10 2. An optical record carrier as claimed in claim 1, characterized in that the birefringent material is a liquid crystal.
3. An optical record carrier as claimed in claim 2, characterized in that the liquid
15 crystal is a nematic liquid crystal.
4. An optical record carrier as claimed in claim 1, characterized in that the birefringent material is a polymeric material comprising polymerised aligned liquid
crystalline monomers.
- 20 5. An optical record carrier as claimed in any one of claims 1-4, characterized in that the grating strips comprise an anisotropic material having at least two refractive indices and the intermediate strips comprise isotropic material and in that one the refractive indices of the anisotropic material is substantially equal to the refractive index of the isotropic
25 material.
6. An optical record carrier as claimed in any one of claims 1-4, characterized in that the grating strips differ from the intermediate strips in that the degree of alignment of the liquid crystal molecules in the grating strips is substantially different from that degree in the intermediate strips.

7. An optical record carrier as claimed in any one of claims 1-4, characterized in that the grating strips differ from the intermediate strips in that the direction of alignment of the liquid crystal molecules in the grating strips is different from that direction in the intermediate strips.
8. An optical record carrier as claimed in any one of claims 1-7, characterized in that the birefringent grating is a transmission grating.
9. An optical record carrier as claimed in any one of claims 1-7, characterized in that the birefringent grating is a reflective grating.
10. An optical record carrier as claimed in any one of claims 1-9, characterized in that first information tracks comprising information areas showing higher spatial frequencies alternate with second information tracks comprising information areas showing lower spatial frequencies.
11. A device for reading a record carrier as claimed in claim 1, which device comprises a radiation source unit for supplying read beam radiation, an objective system for focusing the read beam radiation in the information layer and a detection branch comprising a radiation-sensitive detection system for converting read beam radiation the record carrier into an electrical signal, characterized in that the radiation source unit supplies read beam radiation having two mutually perpendicular polarisation components, in that the detection branch comprises a polarisation-sensitive beam splitter and in that the radiation-sensitive detection system comprises a separate detector for each of the two polarisation components from the beam splitter.
12. A device as claimed in claim 11, characterized in that the radiation components constitute two spatially separated read beams and in that the objective system focuses these beams in two spots in the information layer of the record carrier to be read, whereby the distance between the spots in the direction perpendicular to the information track direction is substantially equal to the distance between the information tracks.